

Pulsating Mixer Pump System

Thomas E. Albert (tom_albert@ares-inc.com, 727-734-3800)
American Russian Environmental Services, Inc.
1059 Broadway, Suite G
Dunedin, FL 34698

Abstract

During technical exchanges in FY 1996 between the US Department of Energy Tanks Focus Area Retrieval and Closure program, the DOE Environmental Management International Programs Office, and the Ministry of Atomic Energy of the Russian Federation, the pulsating mixer pump (PMP) technology was identified as a promising technology that could potentially be implemented in the United States. The PMP technology, provided by the Mining and Chemical Combine (MCC) in Zheleznogorsk, Russia, was evaluated as a potential retrieval tool in FY 1997 at Pacific Northwest National Laboratory (PNNL). Based on the evaluation, ORNL and DOE staff determined that a modified PMP would meet project needs for bulk mobilization of Gunite tank sludge prior to deployment or in conjunction with other retrieval systems. In FY 1998, the PMP technology was selected for FY1999 deployment in one of the Gunite and Associated Tanks (GAAT) tanks to mobilize settled solids. In December 1999, the Federal Energy Technology Center (FETC) awarded a contract to American Russian Environmental Services, Inc. (ARES) to deliver a modified pulsating mixing pump system to the GAAT Project. This paper presents a status report of this contract.

The Functional Requirements for the PMP system were developed by the GAAT Project. There are several functional requirements for deployment in the GAAT that differ from the original Russian PMP design. Most significant of these are more flexible control of the intake and discharge cycles and a system for raising, lowering and rotating the system. ARES selected Battelle – Northwest Laboratories to design and fabricate the tank riser interface system to mate the PMP to the gunite tank riser. The remainder of the PMP system is designed and fabricated at the Mining Chemical Combine in Zheleznogorsk, Russia.

Acceptance testing of the PMP system is planned for early November with deliver of the system to Oak Ridge before the end of calendar year 1999.